

HIGH FREQUENCY SIGNAL SOURCE AND
METHOD OF GENERATING SAME USING DIELECTRIC
RESONATOR OSCILLATOR (DRO) CIRCUIT

Abstract of the Disclosure

A high frequency signal source and method of generating a high frequency signal is disclosed. An output signal is generated from a dielectric resonator oscillator and mixed with an output signal from a voltage controlled oscillator having a predetermined tuning range and part of a phase locked loop circuit to sum the frequencies for creating a final output frequency. A portion of the final output frequency is coupled into the phase locked loop circuit that is phase locked to a reference signal from a crystal reference oscillator. The voltage controlled oscillator has a tuning range that is used to compensate for the dielectric resonator oscillator initial frequency error and drift over temperature and aging while the balance of the bandwidth is used to provide the tuning range on the local oscillator output. The phase locked loop circuit is phase locked to the reference crystal oscillator that is used to compensate for any initial dielectric resonator oscillator frequency errors because of manufacturing and for any drift because the temperature changes or aging.